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| 09/342,742 | 06/29/1999 | SHANKAR NATARAJAN | CISCP111/107 | 7044 |

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| EXAMINER | |
|---|---|
| LEVITAN, DMITRY | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2662 | #04 |

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/342,742 | NATARAJAN ET AL. | |
| | Examiner | Art Unit | |
| | Dmitry Levitan | 2662 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6,10-19 and 40-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,10-19 and 40-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The finality of the previous office action has been withdrawn to clarify the rejection of the proposed claims.

***Claim Rejections - 35 USC § 102***

1. Claims 1, 4, 10-18, 40, 45-47, 52, 53, 54-59 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe (US 6,108,304).

Regarding claims 1, 4, 12, 14, 40, 45-47, 52 and 53 Abe teaches method, system and computer program for providing dynamic feedback control of network elements in a data network (edge nodes EA, EB, EC, ED and network management equipment 200 on Fig. 1 and col. 4 lines 63-68; col. 5 lines 1-17), the data network including a plurality of network elements (EA, EB, EC, ED on Fig. 1), each of said elements having a plurality operating parameters associated therewith (bandwidth, buffer status information on col. 10 lines 23-45), said operating parameters being related to at least one control parameter (calculated available bandwidth col. 7 lines 32-60) of said element, said element comprising:

receiving information (measured bandwidth col. 6 lines 5-19) relating to an operation of a first subset (edge nodes on Fig.1) of the plurality of network elements;

providing at least portion of said received information (measured bandwidth) to at least one analysis entity (network management equipment 200 on Fig. 1 and col. 6 lines 8-19) for analyzing said portion of received data and calculating updated control information (available bandwidth col. 6 lines 8-19) based on such analysis, wherein the updated control information specifies an adjustment amount to a control parameter (inherently part of the system, because

any bandwidth update includes the bandwidth adjustment amount) of the least one network element;

receiving the updated control information calculated by the analysis entity (col. 7 lines 51-60); and

providing the updated control information to at least one of the network elements (col. 7 lines 51-60).

In addition, regarding claims 40 and 47, Abe teaches processors with memory (col. 5 lines 42-58) and computer program to implement the method (flowchart Fig. 21 and col. 7 lines 32-60).

Regarding claims 10, 11, 15-18, Abe teaches a second subset of the plurality of ATM or Frame Relay (col. 5 lines 14-17) network elements (relay nodes N1, N2 and N3 on Fig. 1) controlled by the same network management equipment 200, receiving control data in response of data congestion of the first network elements (edge nodes on Fig. 1) as shown on Fig. 15 and 23 (col. 8 lines 5-40).

Regarding claim 13, Abe teaches the method with periodically updating receive (monitor RM cells col. 10 lines 63-68 and col. 11 lines 1-15) information on available bandwidth.

Regarding claims 54, 56 and 58, Abe teaches the updated control information (congestion or error detected on R2 Fig. 16 and 10:36-38) specifies an adjustment amount to a control parameter (no available bandwidth on R2 as shown on Fig. 16) of at least one network element (EC on Fig. 16) to effect dynamic reconfiguration of at least one parameter of (change of status for link R6 from standby to main on Fig. 17 and 10:36-45) the network element.

Regarding claims 55, 57 and 59, Abe teaches the updated control information (congestion or error detected on R2 Fig. 16 and 10:36-38) specifies an adjustment amount to a control parameter (no available bandwidth on R2 as shown on Fig. 16) of at least one network element (EC on Fig. 16) to effect dynamic reprovisioning of at least one parameter of (inherently part of the system, because bandwidth of links connecting EC with N2 and N3 is updated per switching from R2 to R6 route 10:55-58) of a link associated with the network element.

***Claim Rejections - 35 USC § 103***

2. Claims 2, 3, 5, 6, 41-44 and 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US 6,108,304) in view of Hanson (US 5,633,861).

Abe teaches all limitations of the parent claims 1, 40 and 47.

Abe does not teach control information that specifies excess information rate value and committed burst size value of a network element.

Hanson teaches control information that specifies excess information rate value and committed burst size value of a network element (channel utilization factor CUF on Fig. 6 and col. 5 lines 63-67, col. 6 lines 1-8, col. 7 lines 65-67, col. 8 lines 1-67).

It would be obvious to one of ordinary skills in the art at the time the invention was made to add control information that specifies excess information rate value and committed burst size value of a network element of Hanson to the system of Abe to improve the system handling different customers requirements.

3. Claim 19 is rejected under 35 U.S.C. as being unpatentable over Abe in view of Desai (US 5,781,703).

Abe teaches all claim limitations specified in claim 1. Abe does not teach using plurality of network controllers. Desai teaches multiple network controllers (data servers 14 on Fig. 1 and col. 3 lines 2-30). It would be obvious to one of ordinary skills in the art at the time the invention was made to use multiple controllers, as suggested by Desai to the method of Abe to improve reliability of the method.

***Response to Arguments***

4. Applicant's arguments filed 6/21/04 have been fully considered but they are not persuasive.

On page 7 of the Response, Applicant argues that Hanson does not teach dynamically modifying or reprovisioning a virtual connection.

Examiner respectfully disagrees.

Abe teaches dynamically modifying or reprovisioning a virtual connection (Abe 6:10-13).

Examiner used only portion of Hanson teaching related to the types of control information (CIR, EIR etc.) used for measurement and regulation of virtual connections in a network and relying on Abe system teaching of dynamic modification.

Examiner believes that Applicant's analysis of Hanson system is misplaced, as the reference was not relied upon to meet the argued limitations. It is the combined teaching of both Abe and Hanson that should be taken in combination.

In response to applicant's argument on page 8, that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or

modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Abe and Hanson address the same problem of congestion in an ATM network by measuring the congestion and utilizing available resources. Abe teaching of bandwidth as a control information in his system and Hanson teaching of other parameters (as CIR or EIR) to be used as a control information, is the reason to combine these references, as the control information can be tailored to different customers needs.

On page 10 of the Response, Applicant argues that Abe does not teach dynamically modifying or reprovisioning a virtual connection.

Examiner respectfully disagrees.

Applicant's quotation of Abe (8:15-25) relates to an initial setup of the node and does not describe or limit the overall operation of the system.

Abe teaches dynamically modifying or reprovisioning a virtual connection by measuring dynamically changing bandwidth and setting up an available bandwidth on each route based on the received bandwidth information (Fig. 21 and 5:59-67).

On pages 10-11 of the Response, Applicant argues that Abe does not teach an adjustment amount to a control parameter of the least one network element.

Examiner respectfully disagrees.

Abe teaches calculating updated control information (available bandwidth) and providing it to the network elements (7:51-60). This control information inherently includes the bandwidth adjustment amount to change the network elements bandwidth to the desired value.

Examiner therefore believes that the cited references meet all the claims limitations and the rejection is proper.

***Conclusion***

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is 703-305-4384. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dmitry Levitan
Patent Examiner.
07/16/04.

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